

REMARKS

Claims 4 to 7 and 16 to 26 are pending in this application. Claims 4 to 7 and 16 to 21 are allowed. Claim 22 is rejected under 35 USC 102(b) as being anticipated by McCarthy et al.; claim 22 is rejected under 35 USC 103(a) as being unpatentable over Kubokawa et al. Claims 23 to 26, dependent on claim 22, are objected to but would be allowable if presented in independent form. The proposed drawing correction submitted January 23, 2003 is approved.

Enclosed herewith and addressed to the Official Draftsperson is a request for a drawing correction.

Claim 22 is rejected under 35 USC 102(b) as being anticipated by McCarthy et al. The applicant traverses this rejection as McCarthy et al. cannot anticipate the features of claim 22 or that which is contrary to the features of claim 22 or that which is contrary to the express intended purpose of the teachings of McCarthy et al. McCarthy et al. discloses using magnetic resonance imaging techniques to determine enthalpy conditions as the subject is exposed to a freezing environment and as the subject thaws. In McCarthy et al. the subject is a food product. An air blast freezer provided freezing air to freeze the food product before or during imaging. The imaging is intended to determine ice formation in the food product or the interface being formed between icing and the constituent water composition of the food product. As recited in the claims: "means for identifying the ice content in said object while said fluid freezes from said images" and " means for identifying the position of ice interface in said object from said images as sufficient heat is removed from said object for said water to freeze." The applicant notes that the operative relationship between the source of freezing air and the product and the magnetic resonance apparatus is not disclosed in the drawing. As a result it is highly speculative as to the structural or proximate relationship of the freezing, the product and the apparatus. For example, at col. 8, lines 63-68. the cold air is delivered

through PVC pipe that passes through the NMRI apparatus before returning to the freezer. How does this satisfy the circulating airflow feature of claim 22?

A rejection under 35 USC 102(b) requires that the cited single prior art must explicitly disclose or teach each and every feature of the claim. It is clear from the subject matter of the present invention that the "subject" is a living human being; that it would be irrational to expose the subject to an environment that would cause the subject to become frozen. It is also clear from the subject matter of the invention that the circulating airflow is not a source of freezing air and is intended to comfort the subject during the magnetic resonance imaging procedure. It is also clear from the subject matter of the invention that the circulating airflow has no interaction with the subject with respect to the magnetic resonance imaging procedure. It is also clear from the subject matter of the invention that the means for providing the circulating airflow is made from a non-magnetic material that avoid inference with the magnet system or the means for acquiring a magnetic resonance signal. McCarthy et al. discloses at col. 10, line 34 to 36 that the thermocouples place adjacent to the sample caused imaging interference as the thermocouples are made of wire, i.e., a metal. The means for providing circulating airflow is disposed externally of the magnet system and the circulating airflow is applied externally to the subject. Taking all the features of claim 22 as a whole McCarthy et al. fails to anticipate.

Claim 22 is rejected as unpatentable under 35 USC 103(a) over Kubokawa et al. The applicant traverses this rejection as Kubokawa et al cannot make obvious to one skilled in the art what is not disclosed in Kubokawa et al. or that which contrary to the teaching of Kubokawa et al. In Kubokawa et al. endoscope having at one end an antenna is inserted into the human body. Kubokawa et al. discloses that the endoscope may have means for causing a conductive fluid to flow in the endoscope. Kubokawa et al. further teaches that air may flow through the endoscope to purge/drain the conductive fluid.

When the conductive fluid is purged the endoscope as an antenna for NMR imaging is no longer operational or functional. Claim 22 has been amended to recite that the means for providing airflow is disposed externally of the magnet system and applied externally to the subject. In Kubokawa et al. the air flow is not external of the magnet system and is not applied externally of the subject.

Claim 27 is added. Claim 27 is novel and patentable with respect to McCarthy et al. or Kubokawa et al for the same reasons as claim 22.

The applicant requests reconsideration of the application and the claims as amended and a Notice of Allowance.

Respectfully submitted,

KAN

  
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